REMARKS

A. STATUS OF THE CLAIMS

(I) DISPOSITION OF CLAIMS

(i) Claims 1-13 and 30-32 are pending in the application.

(ii) Claims 1-13 and 30-32 are rejected.

(iii) Claims 14-29 and 33-34 were previously canceled.

(II) APPLICANTS' ACTION

(i) Applicants respond to the above rejections.

B. RESPONSE TO REJECTION UNDER 35 U.S.C. § 103(A)—CLAIMS 1-8, 11-13, & 30-31

The Examiner has rejected Claims 1-8, 11-13, and 30-31 under 35 U.S.C. § 103(a) as obvious over WO 02/083794 to Phillipoz, *et al.* (*hereinafter* "Phillipoz"). The rejection is based on reasons provided previously in the Non-Final Office Action of March 21, 2005. In response to the March 16, 2007 Office Action, Applicants had amended Claim 1 to incorporate the limitations of Claim 33. Despite the Claim 1 amendment, the Examiner has rejected the above-referenced claims because the limitation to the microfiber dimensions are still considered to have been obvious from the disclosure of the cited reference as discussed in the previous office action in the absence of showing of unexpected results that can be attributed to the claimed dimensions.

Applicants respectfully disagree. First, Applicants highlight the differences between the current patent application (hereinafter "subject invention") and the reference art cited by the Examiner.

(I) REFERENCE WO 02/083794A—THE DUPONT REFERENCE

Reference WO 02/083794A to Phillipoz, *et al.* (*hereinafter* "DUPONT") combines short aramid fibers with polymers as a physical mixture, during extrusion or mixing.[1] Such

[1] See Page 6, Lines 6-8.

fibers act more as a filler material. In contrast, in the present invention, the micro-pulp of the aramid fibers is fed as a slurry during the formation of the thermoplastic polymer from the monomer. Thus, the mixing and dispersion of the aramid fibers in the subject invention are greatly improved compared to a physical admixing of aramid short fibers in DUPONT.

DUPONT defines "short aramid fibers" that are less than 150 μm in diameter and having an average length of from 100 μm to about 8,000 μm, and preferably 700 μm to 3,000 μm.[2] In contrast, the micro-pulp fibers of the present invention are in the range of from about 0.1 μm to about 100 μm, which at its highest point, is an 8000% increase in the size of the fiber that DUPONT found adequate.

Similarly, the diameter of the micropulp fibers of the present invention are in the range of from about 8-12 μm, which is about 1200-1500% lower in size compared to the fibers in the DUPONT reference.

Finally, the BET area of the DUPONT fibers is 3-6 m^2/g, while the surface area of the subject invention's micro-pulp is 25-500 m^2/g.[3]

Applicants submit that not only the length dimensions but also the diameter and surface area should be considered in comparing the short aramid fibers of DUPONT with the subject invention's fibers. The fibers of the subject invention have other dimensions that play a significant role in the functioning of the invention. Particularly, the diameter and the surface area of the subject invention help provide intimate mixing. In fact, from the standpoint of diameter, the aramid fibers of DUPONT would appear as discs compared to the rods of the present invention. As an example (and just as an example), we provide a sketch illustration of the aramid fiber of DUPONT and the micro-pulp fiber of the subject invention below, and that too if the length dimensions were the same (they interact only at one point, 100 μm). In fact, if the surface area, the length and the

[2] *See* DUPONT, Page 4, Lines 25-26; Page 16, Claim 2.
[3] *See* DUPONT, Page 5, Lines 9-11 and Page 16, Claim 7.

diameter were taken into consideration, the micro-pulp of the subject invention would be completely different in dimensions, and therefore in physical behavior, compared to the DUPONT aramid fibers.

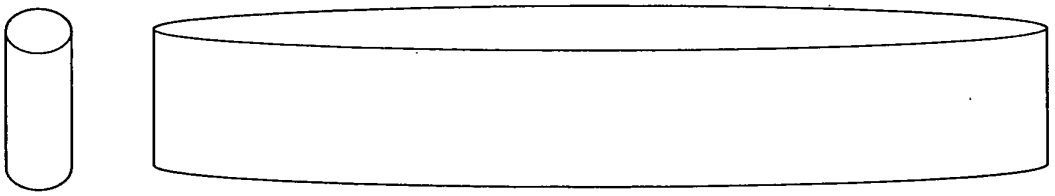


DIAGRAM 1: EQUAL LENGTH AND PRESCRIBED DIAMETERS FOR THE MICRO-PULP OF THE SUBJECT INVENTION AND DUPONT REFERENCE

To gain a further perspective, comparing DUPONT fibers and micro-pulp of the subject invention at their midpoint value of length and diameter ranges suggested by DUPONT would yield an aramid fiber of 4000 μm length and 75 μm diameter compared to a micropulp fiber of 50 μm length and 10 μm diameter, that is, a DUPONT fiber that is 80 times longer and 7 times wider than a micro-pulp fiber of the subject invention.

In light of the above differences, Applicants respectfully submit that the subject invention is not obvious over DUPONT and the Examiner has failed to prove a prima facie case of obviousness.

(II) REFERENCE D2, US 6,068,922A-THE VERCESI REFERENCE-CLAIMS 9-10 & 32

According to the Examiner, from the disclosure of U.S. Patent 6,068,922 to Vercesi, *et al.* (*hereinafter* "VERCESI"), it would have been obvious to add organic fibers to the DUPONT compositions. "Similarly, in view of similarities of the compositions disclosed in DuPont and Vercesi references, use of DuPont compositions to obtain thin sheets or (films) would have been obvious with reasonable expectation of adequate results."

Applicants incorporate arguments made in Section B(I) above relating to the DUPONT reference in its entirety. Applicants further highlight below the differences between

VERCESI and the subject invention. Applicants submit that the only deficiency of DUPONT is not organic fibers as suggested by the Examiner.

VERCESI combines short aramid fibers with polymers as a physical mixture, during extrusion. Such fibers act more as a filler material. In contrast, in the subject invention, the micropulp of the aramid fibers is fed as a slurry during the formation of the thermoplastic polymer from the monomer. Therefore, the mixing and dispersion of the aramid fibers in the present invention are greatly improved compared to a physical admixing of aramid short fibers in VERCESI.

Secondly, the aramid-fiber size of VERCESI is much larger than the micro-pulp-fiber sizes. We have listed below the instances in VERCESI where specific aramid fiber sizes are listed. It should be noted that the micro-pulp fibers of the subject invention have a fiber length from about 0.1 μm to about 100 μm, diameter from 8-12 μm, and a surface area of about 25-500 m^2/g.

1. In Col. 2, Lines 17-22, VERCESI defines "short aramid fibers" as "aramid fibers or particulate materials of a length of 100 μm to 8000μm" and diameter (calculated from aspect ratio) as low as 0.1 μm to 800 μm, in other words, a very broad spectrum of diameter. In contrast, the subject invention's fiber length from about 0.1 μm to about 100 μm, is outside the spectrum of the VERCESI fiber length and the diameter from 8-12 μm is a very narrow point within the vast spectrum defined by VERCESI. We also note that aramid fibers used in VERCESI's Examples are nowhere close to the claimed range of the subject invention's fiber dimensions.

2. In Col. 5, Lines 60-64, in Example 1, VERCESI states that short aramid fibers of the poly(p-phenylene terephthalamide) type; i.e., Kevlar®, were used. The average fiber length is from 700 μm to 800 μm and a BET surface area of 8 to 9 m^2/g. The surface area and the length of the fibers from about 0.1 μm to about 100 μm and a surface area of about 25-500 m^2/g are completely outside the scope of the fiber dimensions of the subject invention.

3. In Col. 6, Lines 52-53, in Example 2, VERCESI states that short aramid fibers of the poly(p-phenylene terephthalamide) type; i.e., Kevlar®, were used (same as Example 1). The average fiber length is from 700 μm to 800 μm and a BET surface area of 8 to 9 m^2/g. The surface area and the length of the fibers are completely outside the scope of the fiber dimensions of the

subject invention, that is a fiber length from about 0.1 μm to about 100 μm, and a surface area of about 25-500 m^2/g.

4. In Col. 7, Lines 23-24, in Example 3, VERCESI states that short aramid fibers of the poly(p-phenylene terephthalamide) type; i.e., Kevlar®, were used (same as Example 1). The average fiber length is from 700 μm to 800 μm and a BET surface area of 8 to 9 m^2/g. The surface area and the length of the fibers are completely outside the scope of the fiber dimensions of the subject invention, that is a fiber length from about 0.1 μm to about 100 μm, and a surface area of about 25-500 m^2/g.

5. In Col. 7, Lines 52-55, in Example 4, VERCESI states that short aramid fibers of the poly(p-phenylene terephthalamide) type; i.e., Kevlar®, were used. The average fiber length of the aramid fibers is about 1,300 μm and a BET surface area of 6 to 7 m^2/g. The surface area and the length of the fibers are completely outside the scope of the fiber dimensions of the subject invention, that is a fiber length from about 0.1 μm to about 100 μm, and a surface area of about 25-500 m^2/g.

6. In Col. 8, Lines 25-35, in Example 5, VERCESI states that short aramid fibers of the poly(p-phenylene terephthalamide) type; i.e., Kevlar®, and the poly(m-phenylene isophthalamide) type, i.e., Nomex®, were used. The average fiber length of the Kevlar® fibers was about 2,000 μm and of the Nomex® fibers was about 3,000 μm. Therefore, the fiber length is very high compared to that of the subject invention, which is from about 0.1 μm to about 100 μm.

A person skilled in the art, combining DUPONT and VERCESI, under the KSR guidelines would not arrive at the conclusion of obviousness because all elements of the subject invention are not disclosed in the combination. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness. Applicants note that Claim 1 was amended previously to incorporate Claim 33, not because Applicants accepted that the prima facie case of obviousness was proved but because of the Applicants inclination to expedite prosecution.

CONCLUSION

In view of the above remarks, Applicants respectfully submit that the stated grounds of rejection have been properly traversed, accommodated, or rendered moot and that a complete response has been made to the Final Office Action mailed August 21, 2007.

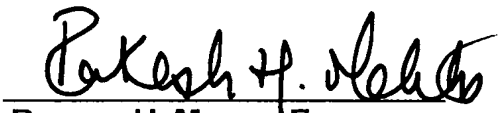
Therefore, Applicants believe that the application stands in condition for allowance with withdrawal of all grounds of rejection. A Notice of Allowance is respectfully solicited.

If the Examiner has questions regarding the application or the contents of this response, the Examiner is invited to contact the undersigned at the number provided.

Should there be a fee due which is not accounted for, please charge such fee to Deposit Account No. 04-1928 (E. I. du Pont de Nemours & Co.).

RESPECTFULLY SUBMITTED,

BY:



DATE: NOVEMBER 21, 2007

RAKESH H. MEHTA, ESQUIRE
ATTORNEY FOR APPLICANTS
REGISTRATION NO.: 50,224
PHONE: 302-984-6089
FAX: 302-658-1192